▣ SUBJECT : Vertical conveyor belt Standardized Adhesion Process

(Steel cord belt)

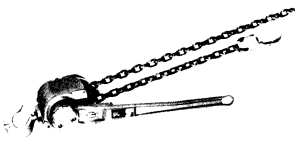
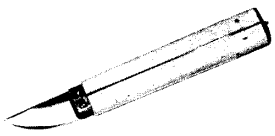
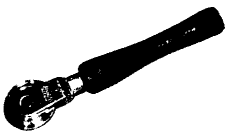
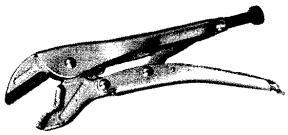
WOOJUNG **T**echnical **R**ubber **B**elt

Table of Contents

1. Belt Endless

1) Preparation

(1) Tools

Name			
Hammer drill		Disc-grinder	
Hand drill		Hand operated winch	
Peeler		knife	
Hand roller		Brush	
Stitcher		Tape measure	
Pliers		Scissors	
Nippers		Others	Vulcanizer and others

(2) Materials

Name	Item	Cement	Tie rubber	Cover Rubber	Filler gum	Fabric	Solvent
Steel cord belt	SAR	SAR – A SAR - B	SAR-TG	SAR-CG	SAR-RR	SAR-RF	Toluene Detergent
	HAR	HAR – A HAR - B	HAR-TG	HAR-CG	HAR-RR	HAR-RF	Toluene Detergent

※ Tips for storage

- Keep them out of the direct rays of the sun, Store them in a dry and cool area under 25 degrees Celsius
- Storage period should be less than 3 months.

2) Endless Process

(1) Selecting Location

ⓐ Safe place for operation

ⓑ Flat place for easy work

ⓒ Place without water, moisture, dust

ⓓ Easy place to install & move the Vulcanizer

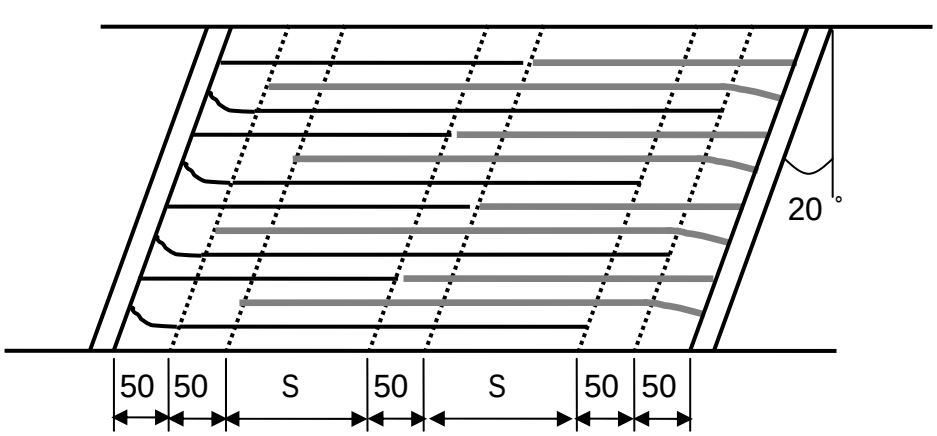
(2) Standard Measures of endless

ⓐ Step length

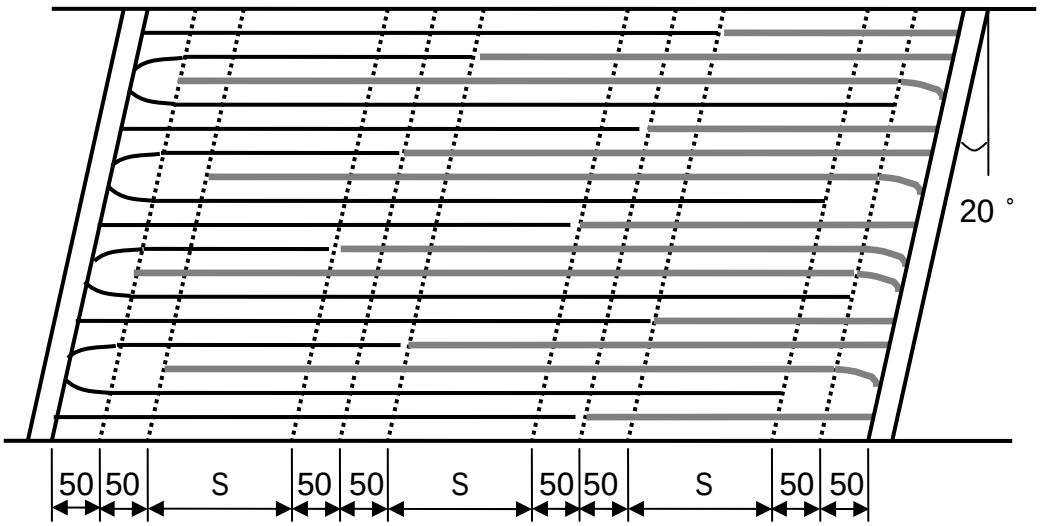
ST –No (㎏/㎝)	Cord dia.(㎜)	Step length "S" (mm)	Endless type
ST – 2000	5.2	600	TYPE 1
ST - 2500	6.8	800	〃
ST - 3150	7.6	950	〃
ST - 4000	8.6	1050	TYPE 2

ⓑ Endless type

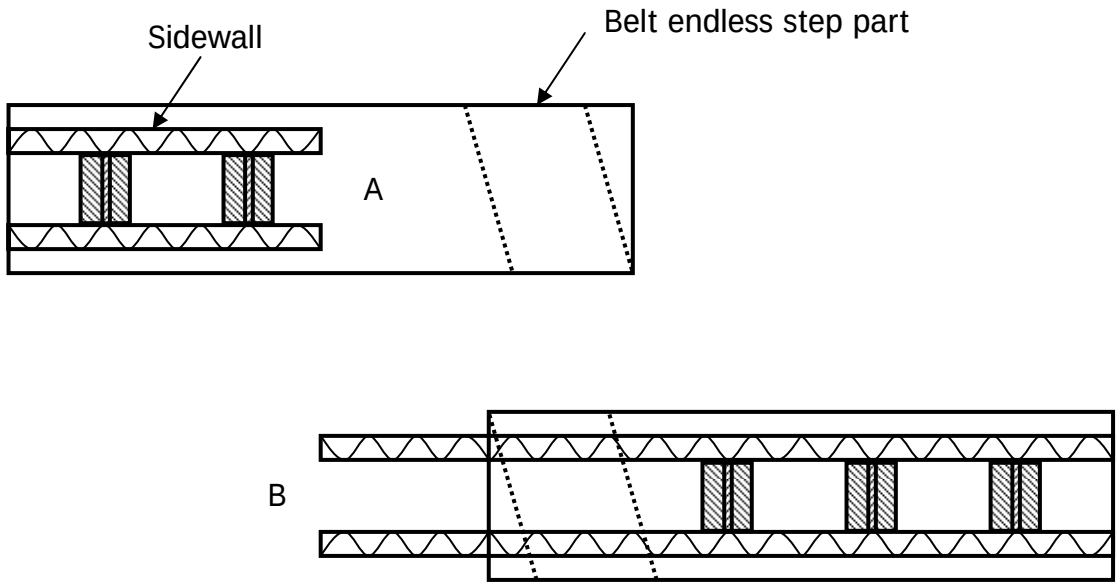
TYPE 1



TYPE 2



ⓒ Sidewall Preparation



< Figure 1 >

㉠ In selecting the Belt endless section, make sure to check the adhesion part of sidewall & cleat pitch

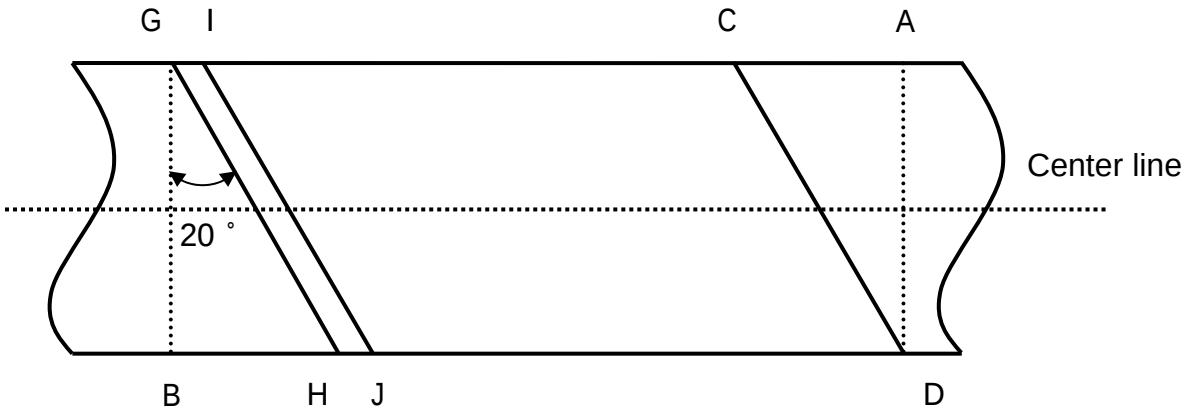
㉡ Avoid the Belt endless section when adhering sidewall

(3) Belt endless method

ⓐ Selecting a location for Belt endless

ⓑ Fasten the belt with the Clamp, then put one end upon the other

ⓒ Referring to the standard measures of Belt endless, adjust the center line, step length (S), angle (0.3B), Band part (K).

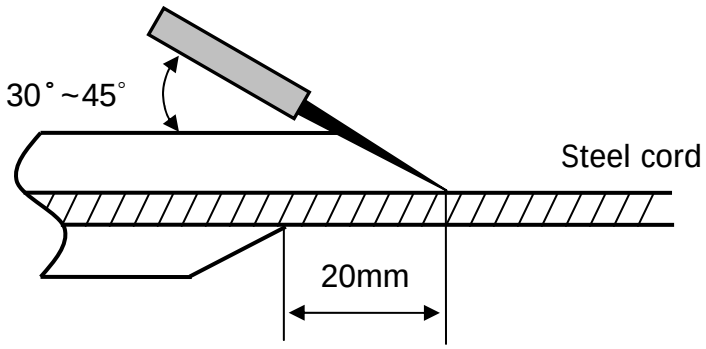


< Figure 2 >

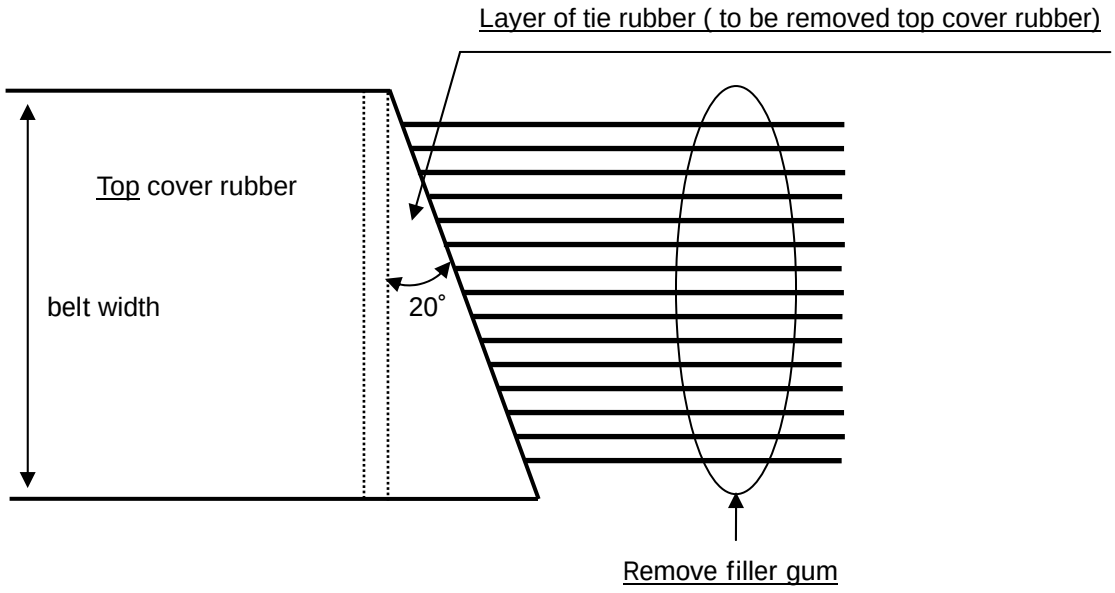
ⓓ Because the Cross rigid steel cord × 2P is inserted, remove the cross rigid steel cord by cutting A-D for the upper step, G-B for the lower step(Don't remove the layer of rubber layer.)

ⓔ Cut from C to D along the line

ⓕ Cut the band part (K) G – H as the figure 3. Since the cross rigid cord is inserted horizontally, take extra care not to damage the vertical steel cord when cutting the cross rigid cord.

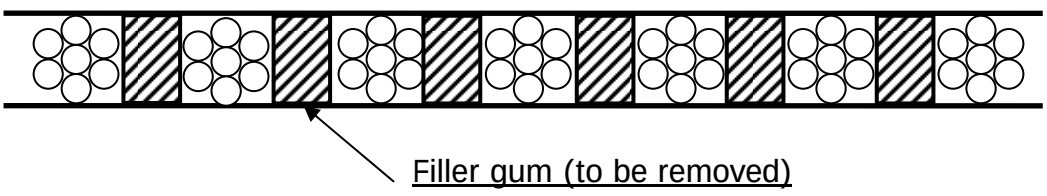


< Figure 3 >



< Figure 4 >

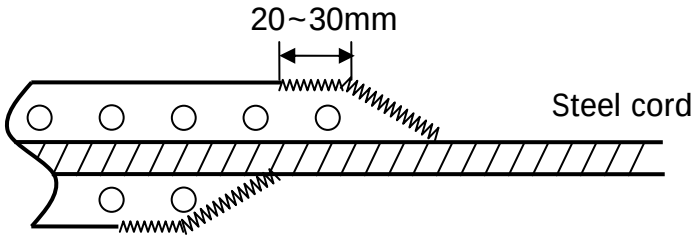
ⓖ Remove the rubber between the Steel cords. (Because it doesn't matter if the steel cords have some rubber on it, try not to damage it in an attempt to remove the rubber so hard.)



< Figure 5 >

ⓗ Cut the cord according to the Endless applicable types.

ⓘ Do buffing to the Cord & Cut parts of cover rubber with wire brushes.



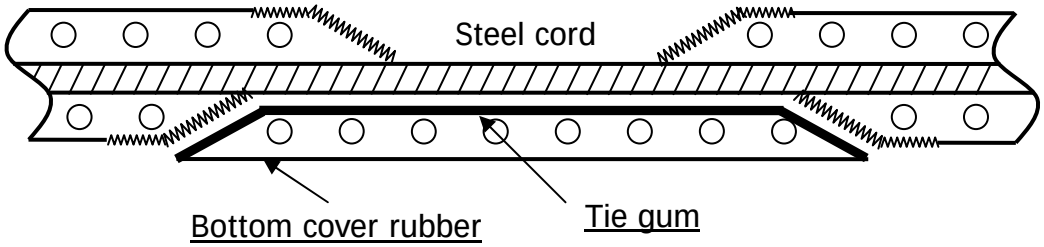
< Figure 6 >

ⓙ Do the same to the opposite.

ⓚ After buffing, shake the rubber dust off and clean it with a solvent.

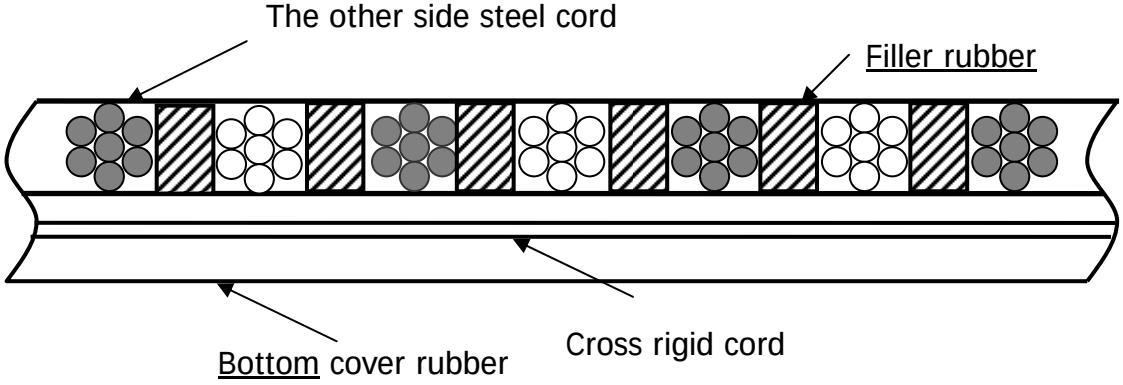
Ⓛ Put the cement on the cleaned parts two or three times and dry. Keep them out of the directs rays of the sun. (Except for the cases of high humidity at night or on rainy days, avoid using driers or ultra-red light bulbs in drying.)

ⓜ Insert the Cross rigid cord and attach the bottom cover rubber.



< Figure 7 >

ⓝ Arrange the cord in order. Then fill the filler rubber according to the applicable types.



< Figure 8 >

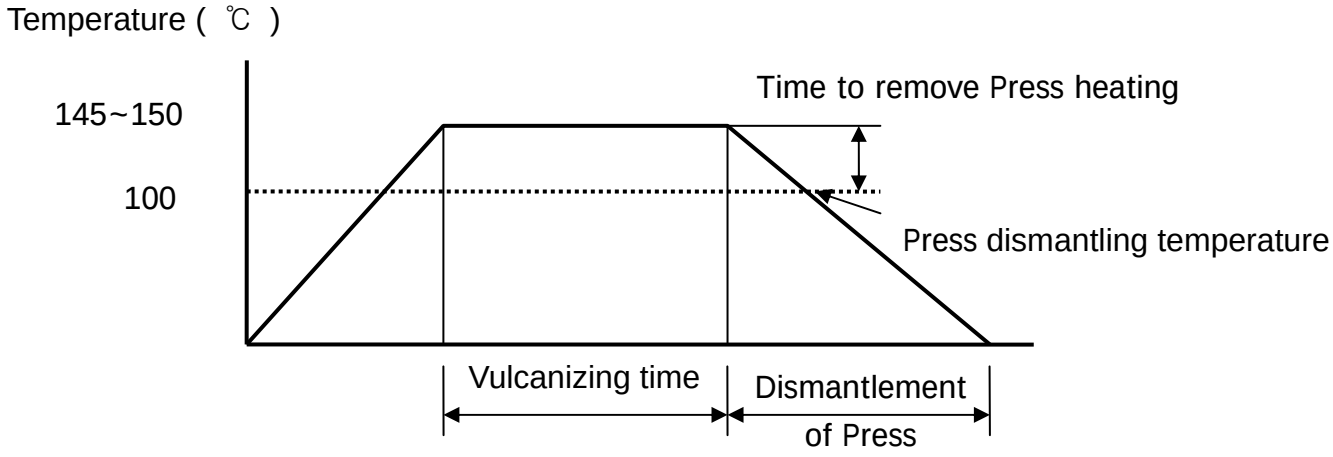
ⓞ After attaching edge rubber & tie gum, insert the horizontal cross rigid cord and attach the top cover rubber. (Cut off the remaining cover rubber and remove bubbles if there is any.)

ⓟ If Step is longer than press, make sure to secure enough length of press by connecting one another. (When the connected press are being vulcanized, there is a possibility to cause lack of pressure. In order not to cause lack of pressure, insert a 3.2t-iron plate which is longer than the entire step between the press and the belt.

ⓠ Vulcanize with the Vulcanizer (portable press)

Item	Time(Min.)	Temperature (℃)	Pressure(kg/㎠)	Edge iron (㎜)
SAR	40	145~150	8~10	Belt Thickness - 0.5 ~ - 1.0㎜
HAR	45			

※ If the belt is thicker than 10mm, add extra 1 minute of vulcanizing per every 1mm.



< Figure 9 >

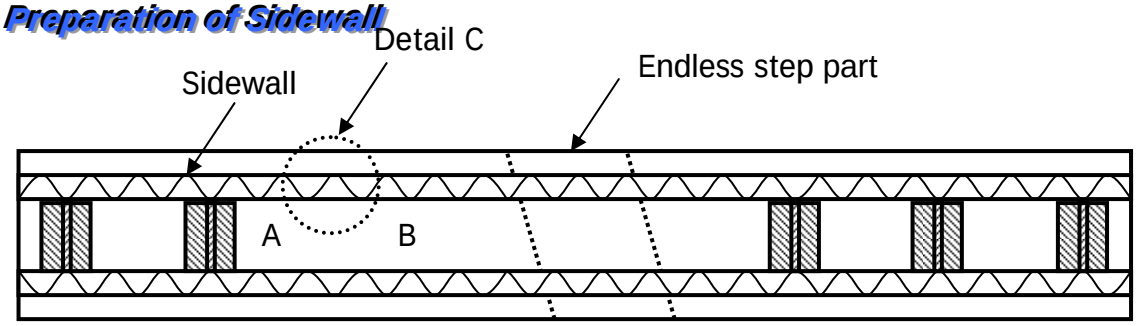
ⓠ After vulcanizing, remove the heating, Then dismantle the press when its surface temperature go down under 100℃.

ⓡ Finish the belt surface with disc-grinder.

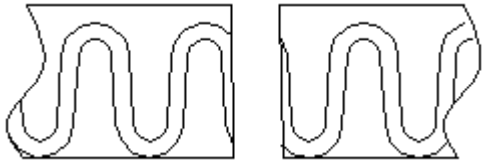
ⓢ Dismantle the Clamp and adjust belt tension with take-up pulley.

2. Sidewall Adhesion

1) Preparation of Sidewall



< Figure 9 >



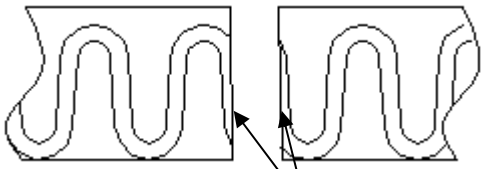
Detail C

ⓐ In cutting Sidewall, do it as the above figure 9. (detail C)
(Cut it extra longer for the sidewall adhesion.)

ⓑ Cut the Pitch identically in both right and left sides.

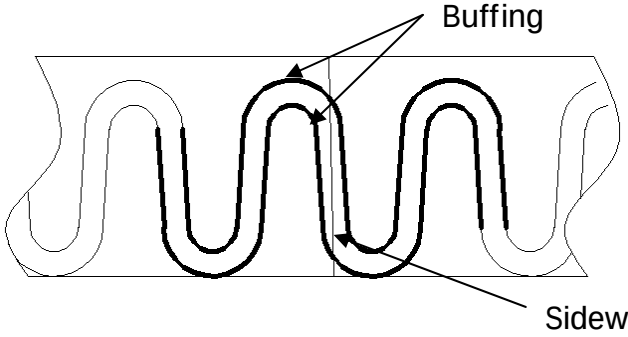
2) Buffing

ⓐ Do buffing to the Sidewall adhesion part as the figure 10.
(After buffing, put the both ends together and keep buffing until it becomes exactly the same as the sidewall prototype.)



< Figure 10 >

ⓑ Buff the inside and outside of Sidewall as figure 11
(Parts to attach the fabric after adhering Sidewall)



< Figure 11 >

3) Endless of sidewall & adhesion to the base belt

ⓐ Clean the Buffing parts with a detergent

ⓑ Spread with the adhesives.

(Dry fully for the second time but for the third time dry until it doesn't get sticky.)

ⓒ Mark the place where the Cleat is to be attached.

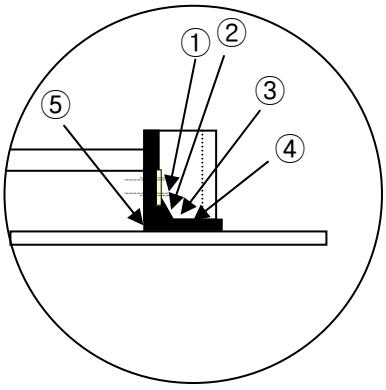
ⓓ Put together the sidewall adhesion parts as the figure 4

ⓔ Compress them to the base belt using the hammer drill.

ⓕ Pat the entire part evenly.

(No patting on the same part for more than 3 seconds)

ⓖ Compress ①~④,⑤ in order as the figure 12



< Figure 12 >

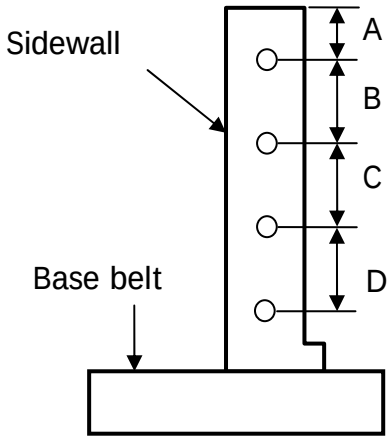
ⓗ Attach the fabric to the Buffing part of the figure 11

ⓘ Make a bolting hole onto sidewall with a electric drill as the figure 13.

(Refer to the table 1)

< Table 1 > Sidewall bolting hole Standard

Sidewall Height (mm)	Number of Bolting hole (EA)	Size (mm)			
		A	B	C	D
120	1	30			
200	2	30	70		
250	3	30	70	70	
400	4	30	70	70	70



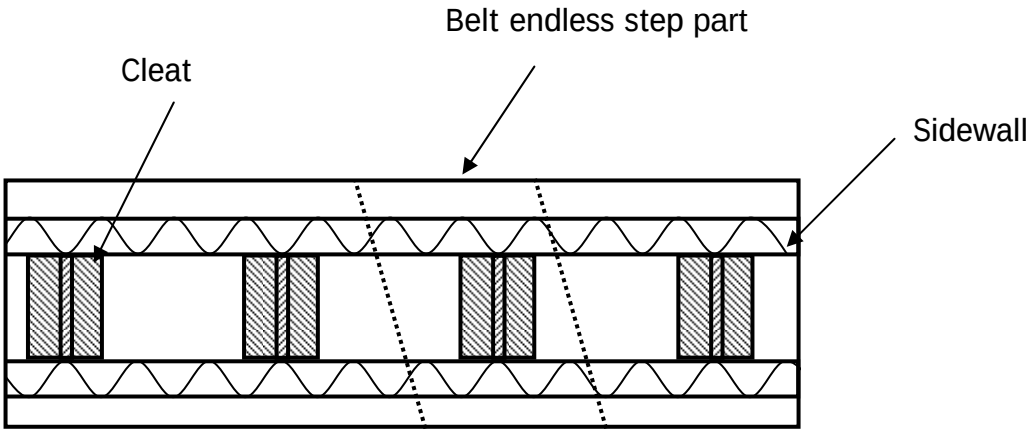
< Figure 13 >

ⓙ Assemble the Bolt and cut off the parts sticking out of the nut

3. Cleat adhesion

1) Preparation of cleat

ⓐ As for the Cleat pitch, comply with the below figure 14. the same as design



< Figure 14 >

2) Buffing

ⓐ Cleat adhesion part & cleat must be buffed.

3) Adhesion

ⓐ Clean the Buffing parts with a detergent

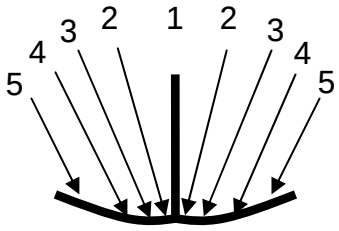
ⓑ Spread with the adhesive.

(Dry fully for the second time but for the third time dry until it doesn't get sticky.)

ⓒ Pat the entire part evenly.

(No patting on the same part for more than 3 seconds)

ⓓ Compress 1~5 in order as the figure 15.(Start with the center to the end)



< Figure 15 >

ⓔ Attach the Holder.

※ Do not operate the machine for 12 hours after the attachment in order for adhesives to be solidified.